

# Graphics Editor MATES STUDIO

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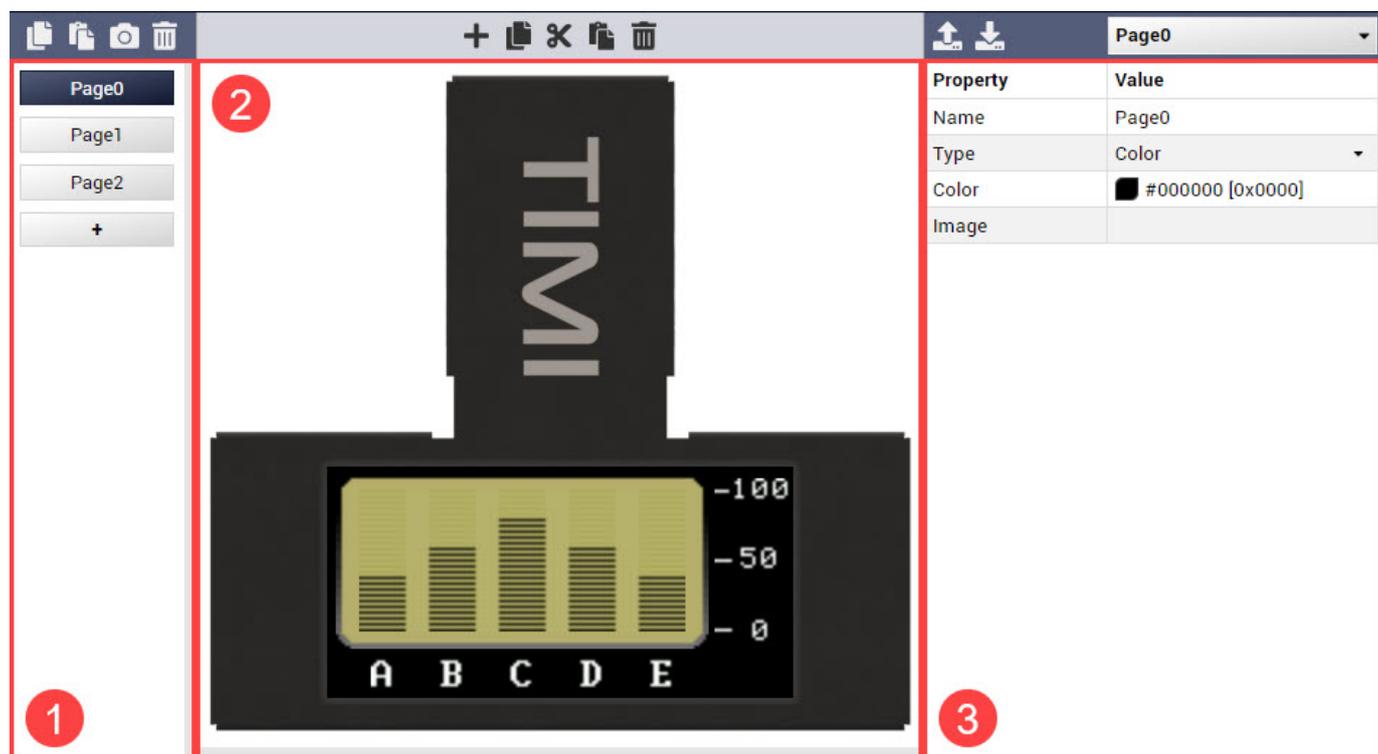
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# Introduction

Mates Studio provides a graphics editor for its Architect, Genius and Builder environments. This provides the ability to create custom page designs using various widgets supported by the BBM display modules. The interface is composed a graphics toolbar and three main editor tools.



## 1. Page Selection

Provides a simple interface to add pages and select a page for editing.

## 2. Visual Editor

Provides a drag-n-drop interface for selecting and positioning widgets.

## 3. Property Editor

Provides an editable property table for editing page and widget parameters

# Graphics Toolbar

The graphics toolbar provides buttons and dropdown menus for managing pages and widgets.



From left to right, the toolbar items are described in the table below:

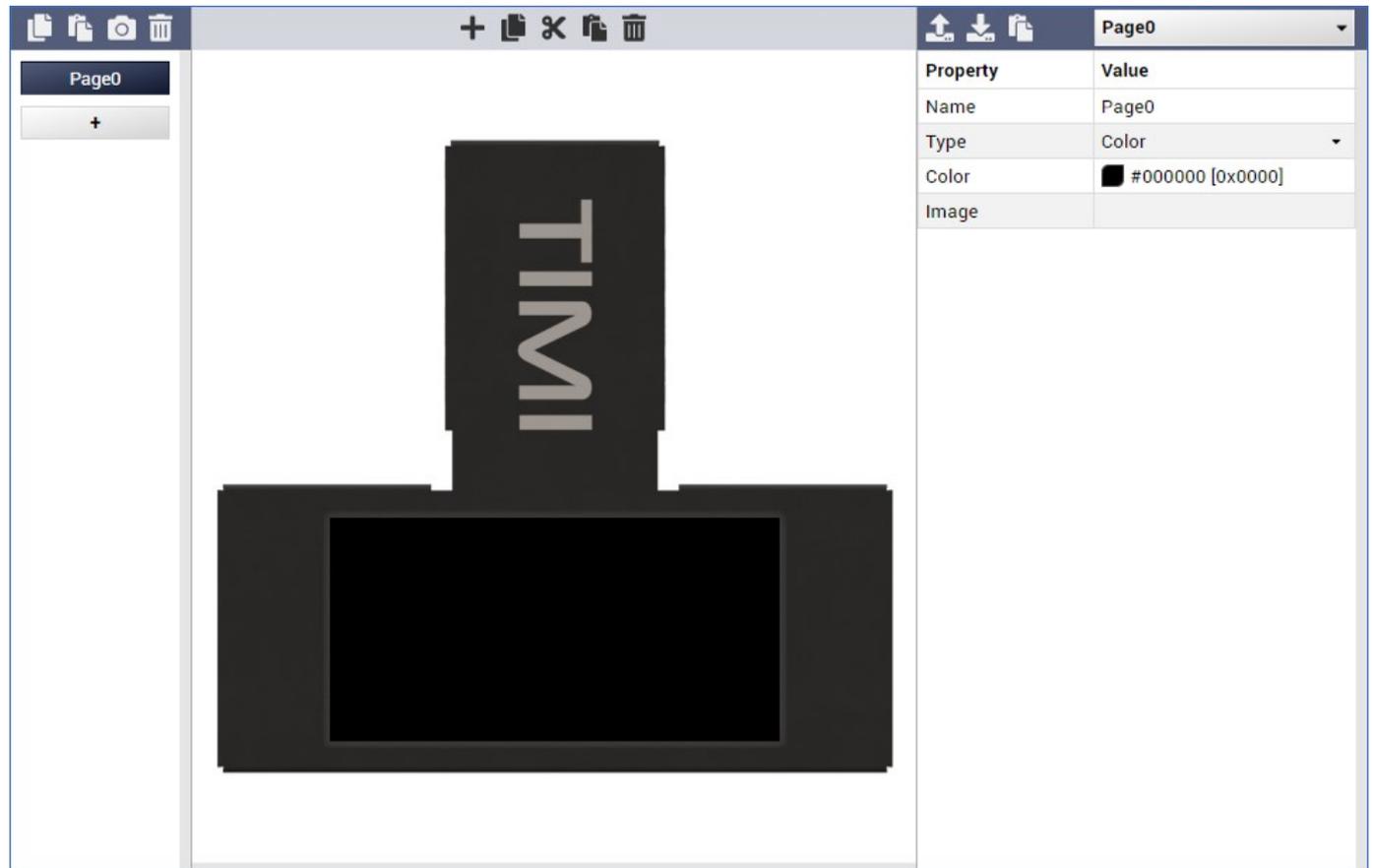
Item	Description
Copy Page	Copies the selected page for pasting
Paste Page	Pastes the recently copied page to the current project
Capture Page	Saves a snapshot of the selected page as an image file
Delete Page	Deletes the selected page
Add Widget	Opens a Select Widget window
Copy Widget	Copies the selected widget for pasting
Cut Widget	Copies the selected widget for moving to another page
Paste Widget	Pastes the recently copied widget
Delete Widget	Deletes the selected widget
Load Configuration	Loads a widget or page configuration file
Save Configuration	Saves the selected a widget or page as a configuration file
Paste Code	Pastes a code snippet for the widget/page in the current cursor position in the text editor <i>(only available in Genius)</i>
Page/Widget Select	Lists the page and the widgets in the selected page for selection

# Designing a Project

This section discusses the common procedures when designing the user interface for Architect, Genius and Builder projects.

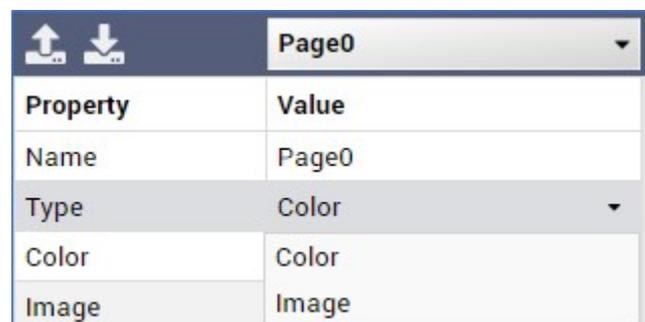
## Styling Pages

New Mates Studio projects, excluding Commander, includes a blank page with a default black background color.



### Background Type

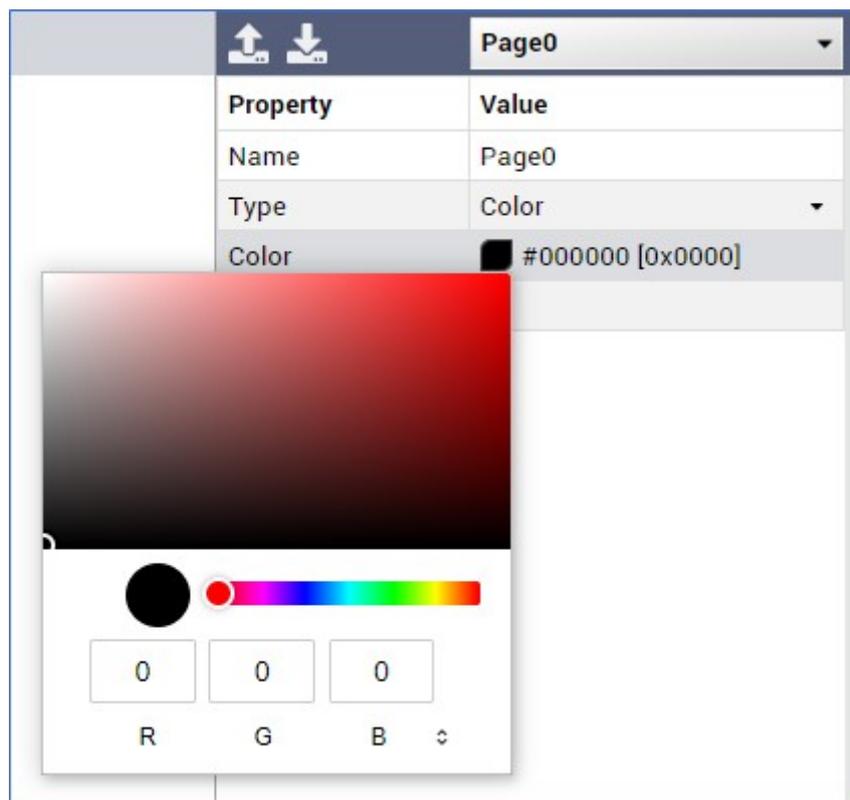
Each page can have either a background color or image.



Select the desired background **Type** for your page.

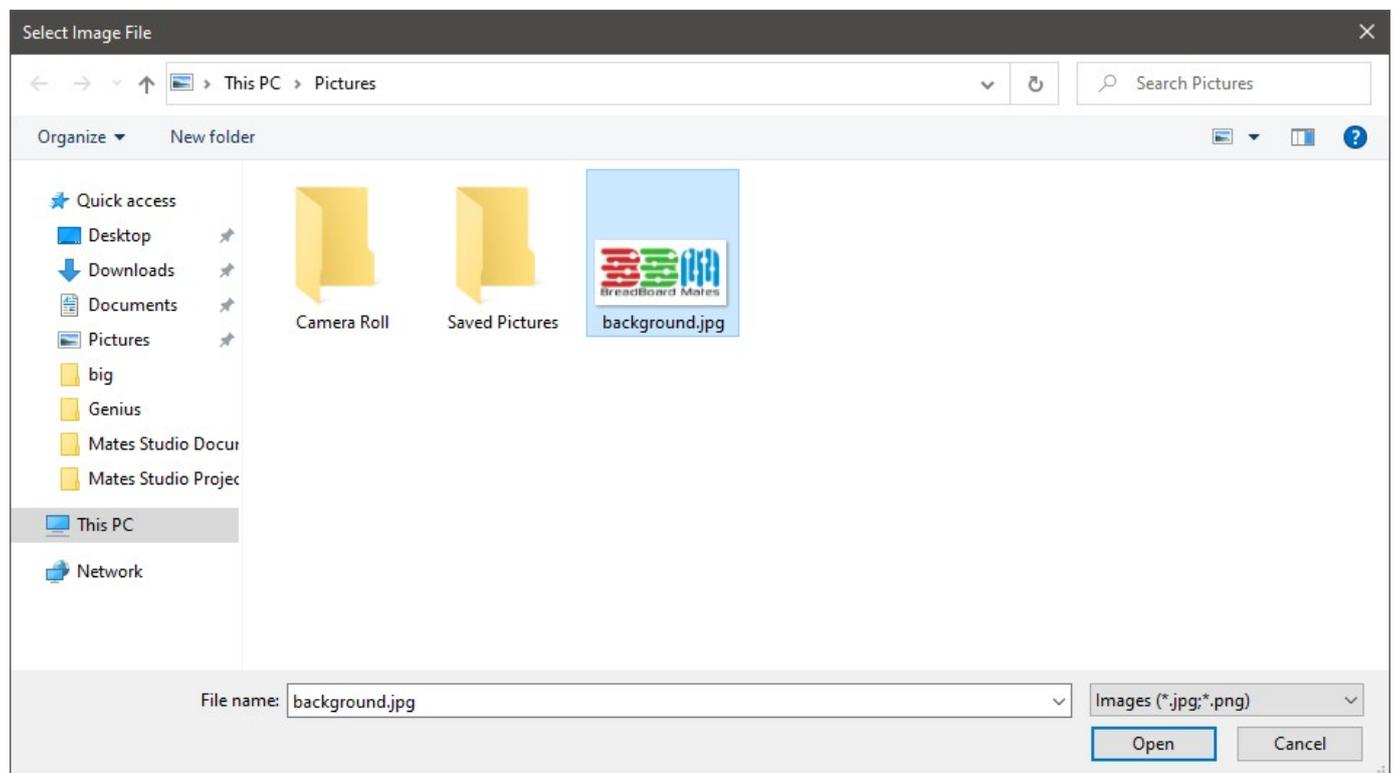
## Background Color

If the Page's background **Type** is **Color**, the **Color** property can be modified with a custom color value as shown.



## Background Image

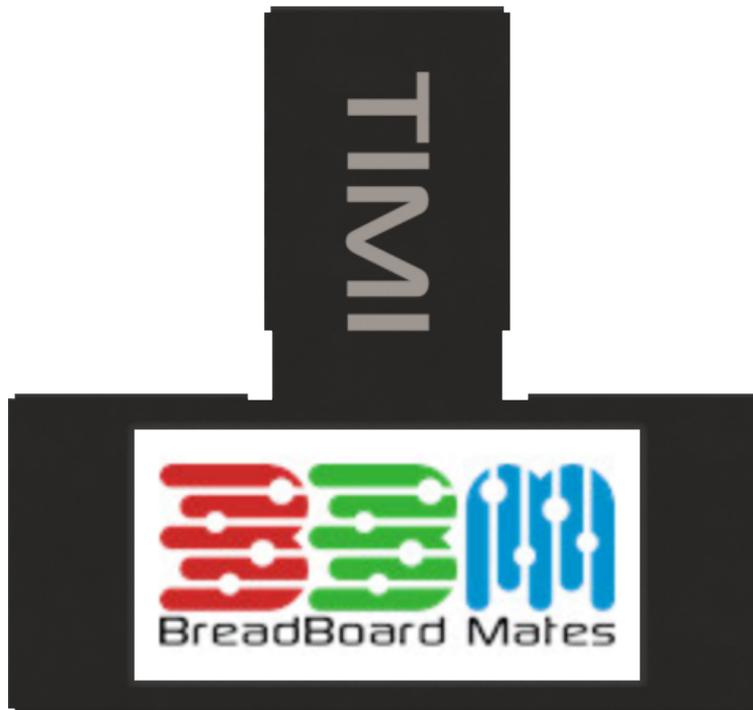
If the Page's background **Type** is **Image**, the **Image** property can be modified by clicking the value cell and selecting an image file.



After selecting a file, this is embedded into the project and the filename is displayed as shown.

Property	Value
Name	Page0
Type	Image
Color	 #000000 [0x0000]
Image	background.jpg

The image will be used as the background as shown in the Page Editor.



## Add Pages

To add a new page, simply click in the *Add Page* button.



This will open the **Select Template** window that provides a selection of simple page background designs.

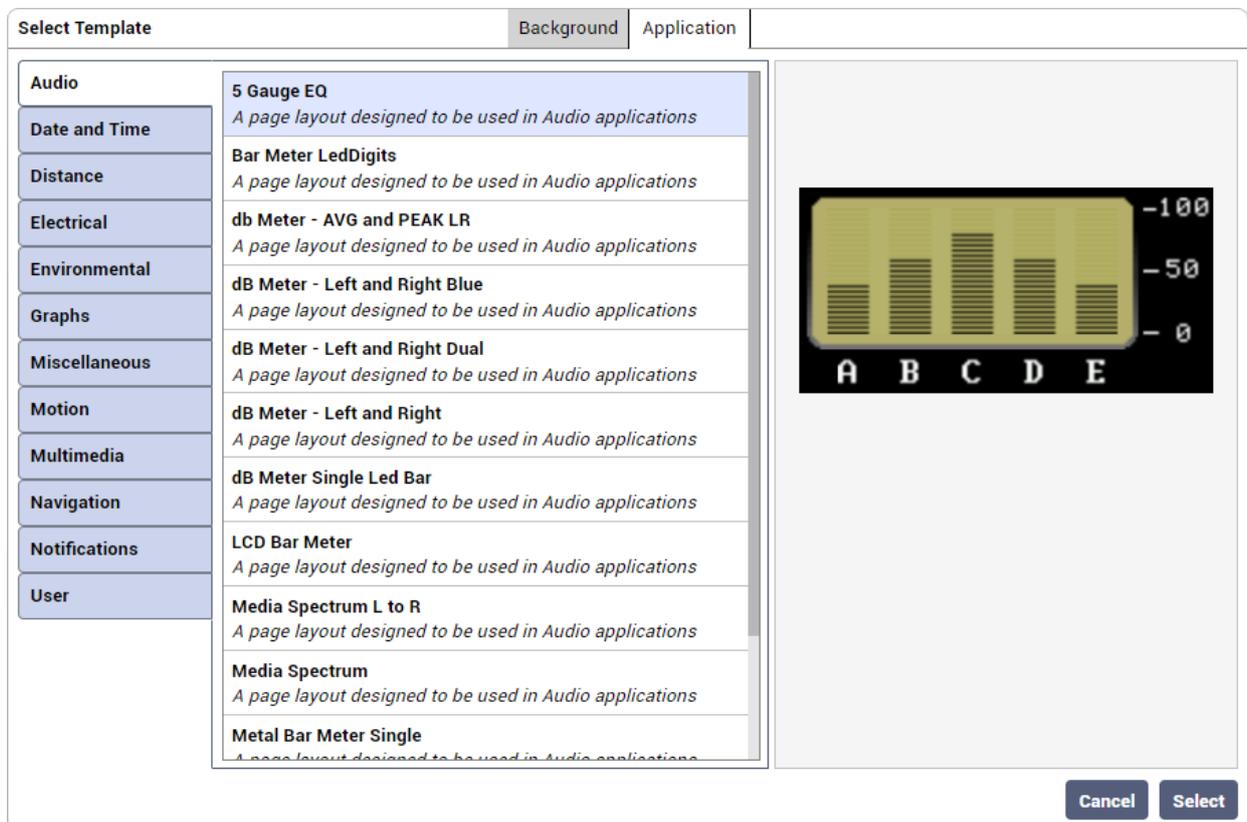
Templates are categorized into two types: [Background](#) and [Application](#) templates

## Background Templates



Background templates are simple designs which helps generate basic layouts using background widgets.

## Application Templates



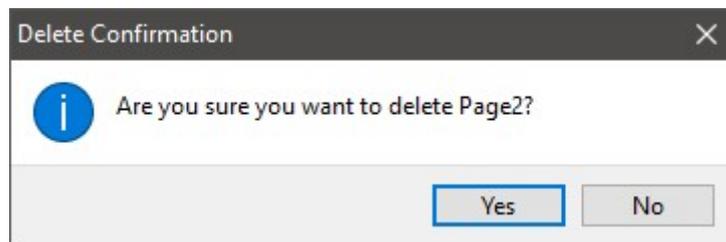
Application templates are designs for common use cases. These designs are also available in Commander environment.

## Delete Pages

Pages can be deleted by clicking the *Delete Page* button while the target page is selected.



A confirmation window will open. Simply click **Yes** to proceed or **No** to cancel.



### Note

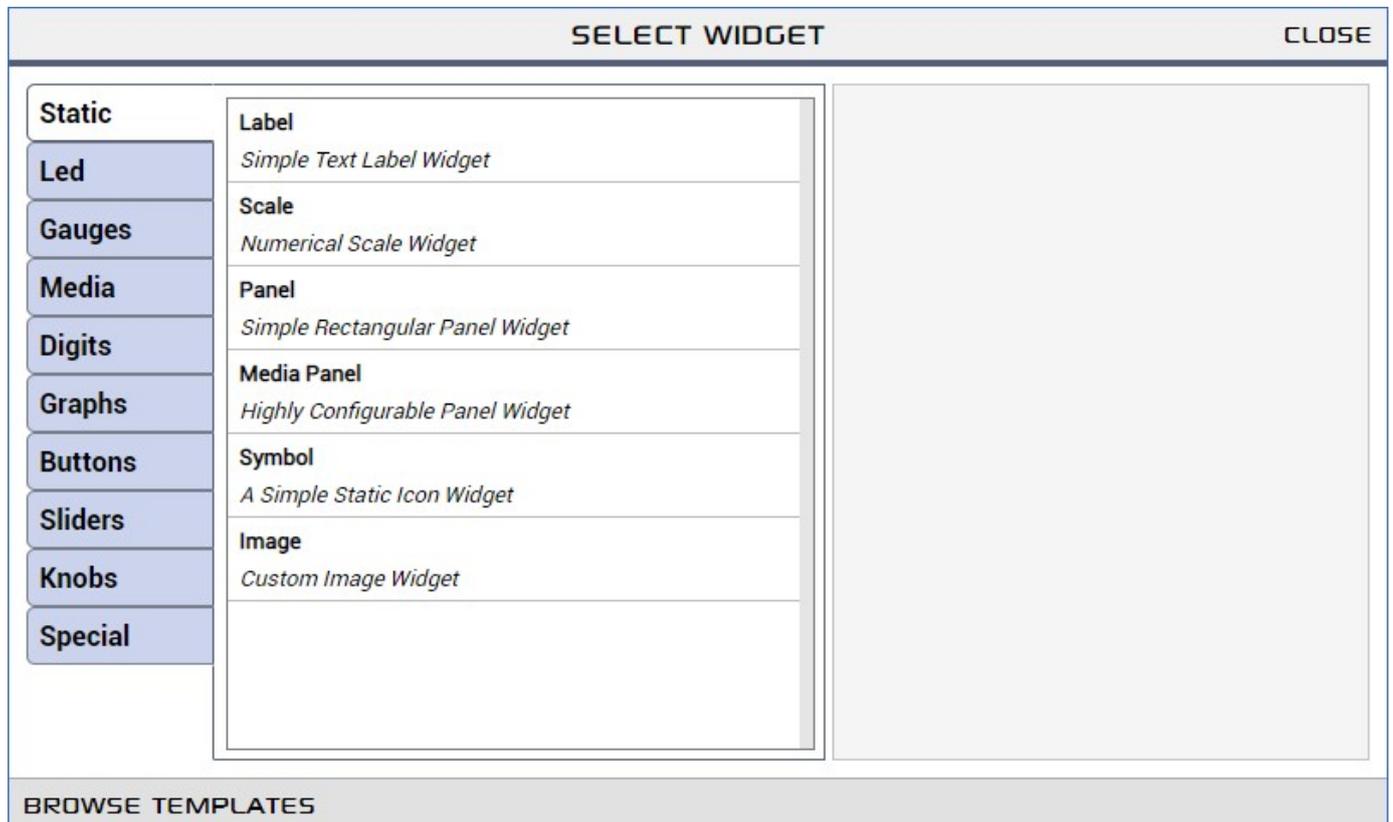
Deleting a Page performs an automatic page and widget renumbering. Therefore, it is best to complete the user interface design before developing code.

## Add Widgets

To add a widget to the active page, click the *Add Widget* button.



This will open the **Select Widget** window



This window provides the option to either select a widget with its default property values or select a pre-made template with custom designs from the BBM team and community.

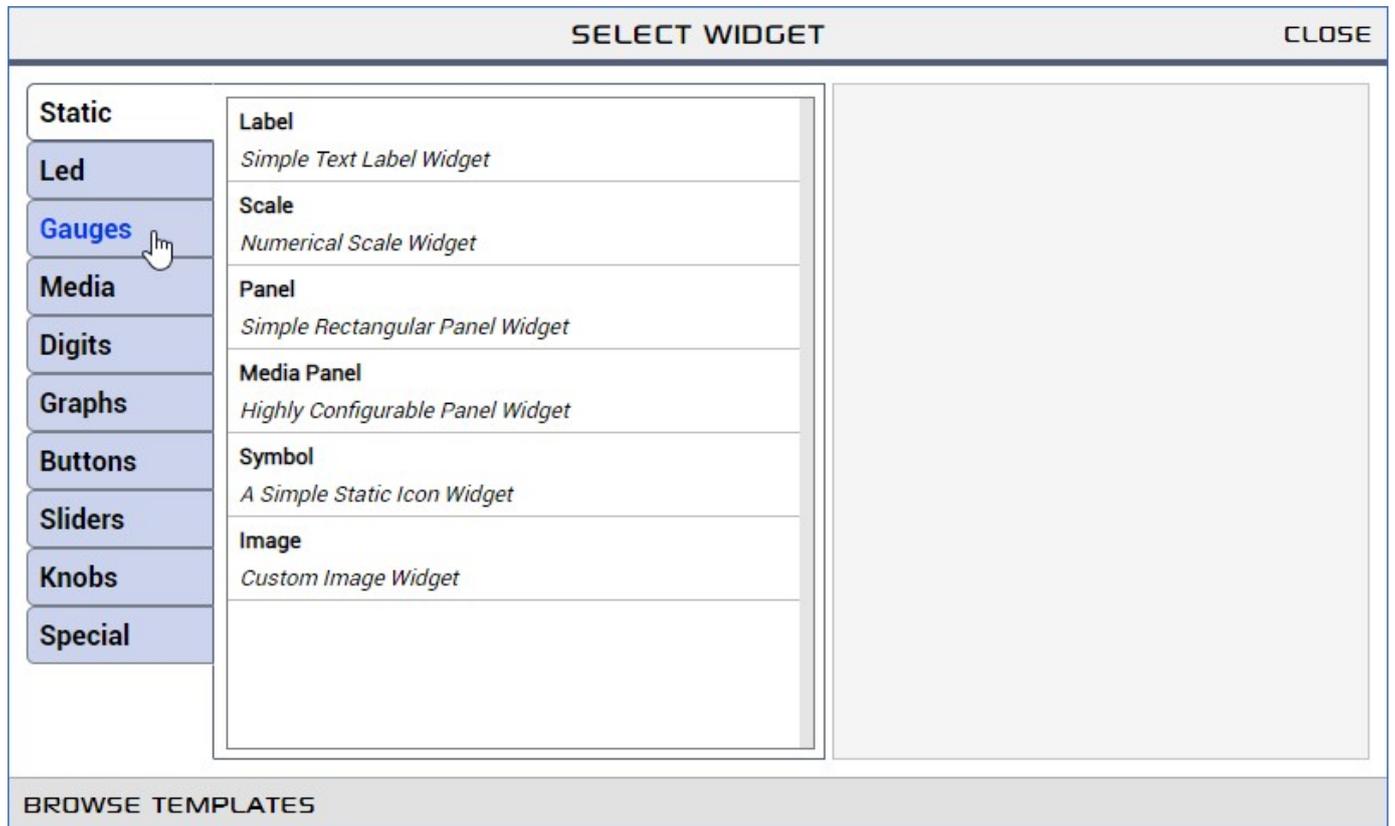
### Note

Adding a widget performs an automatic widget renumbering. Therefore, it is best to complete the user interface design before developing code.

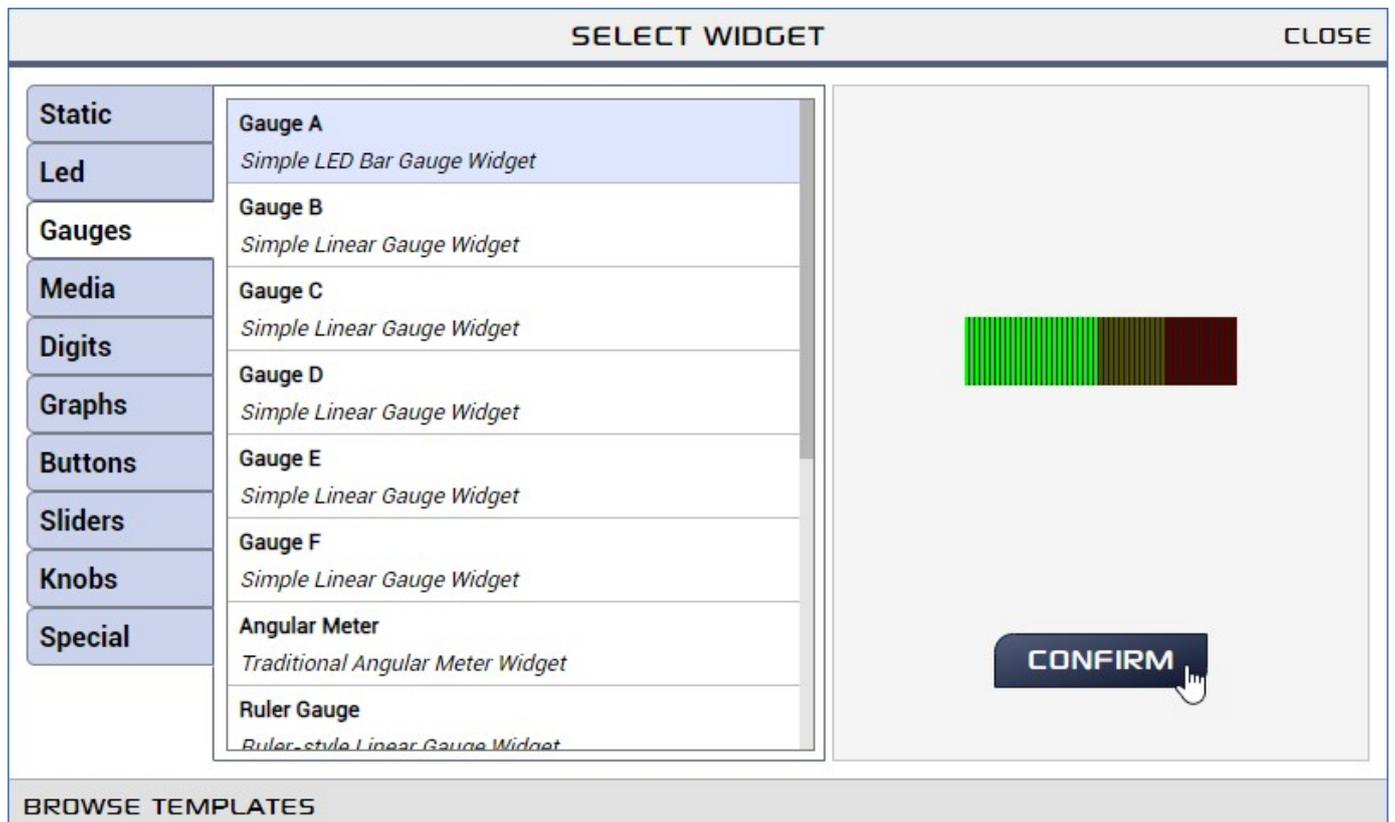
### Default Styles

The Select Widget window opens with category and list of available widgets. This selection includes and creates the widgets' default styles.

Select the widget category from the tabs on the left.



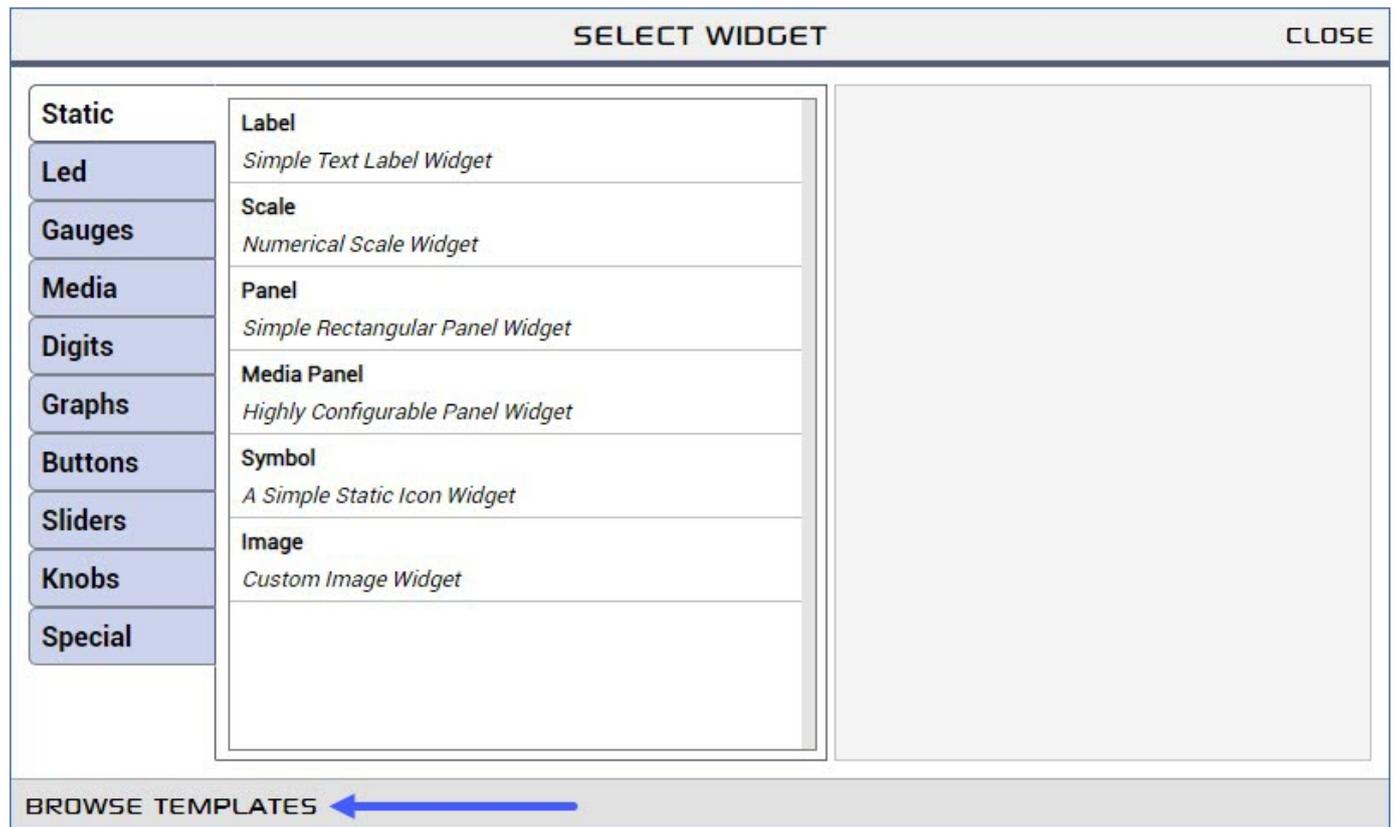
Select the widget type from the list.



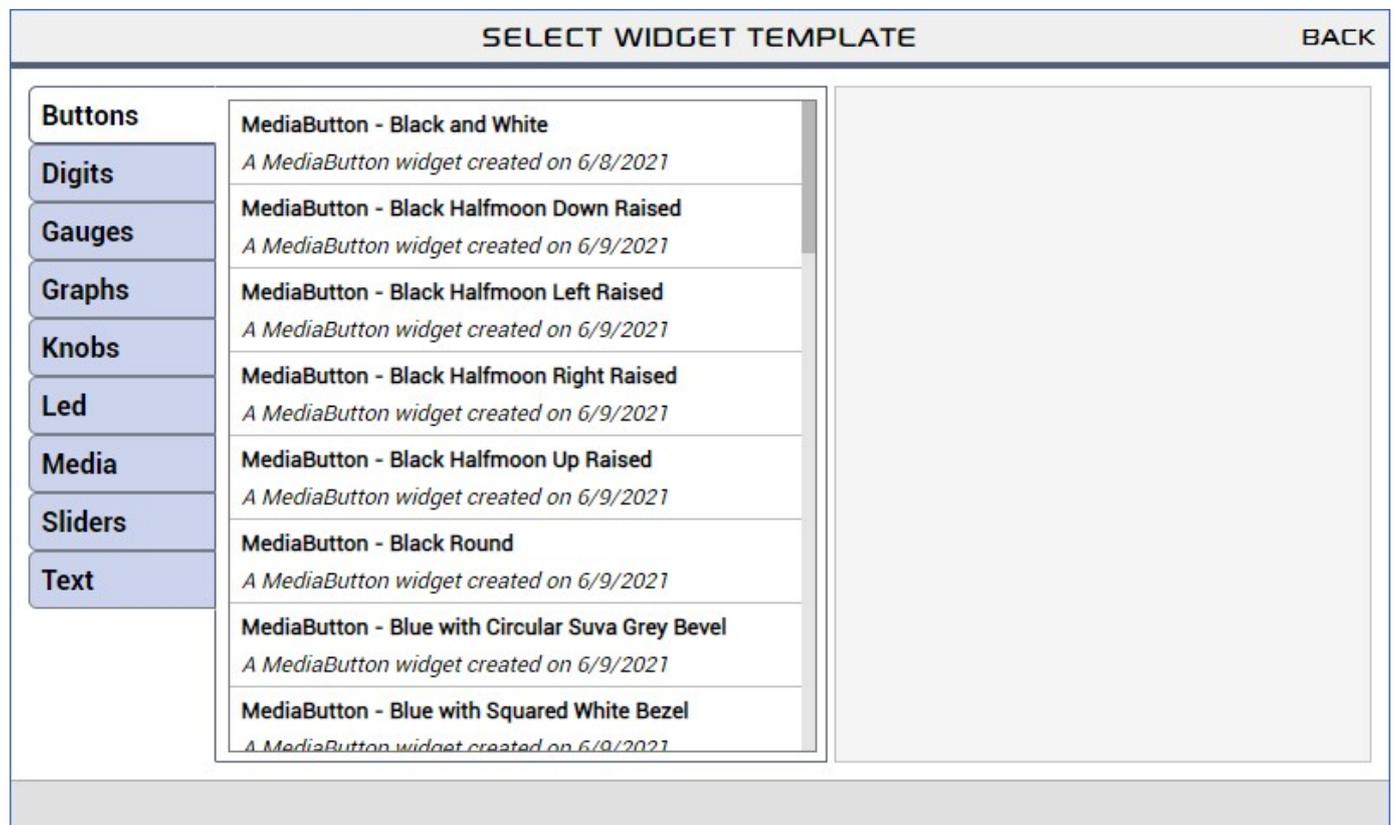
Click **CONFIRM** to proceed.

## Widget Templates

Click **Browse Templates** to change the selection to the pre-designed widgets.



This will display available widget templates listed per category.



Select the template category from the tabs on the left.

**SELECT WIDGET TEMPLATE**
**BACK**

<b>Buttons</b>	<b>MediaButton - Black and White</b> <small>A MediaButton widget created on Tue Jun 08 2021</small>	
<b>Digits</b>	<b>MediaButton - Black Halfmoon Down Raised</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Gauges</b>	<b>MediaButton - Black Halfmoon Left Raised</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Graphs</b>	<b>MediaButton - Black Halfmoon Right Raised</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Knobs</b>	<b>MediaButton - Black Halfmoon Up Raised</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Led</b>	<b>MediaButton - Black Round</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Media</b>	<b>MediaButton - Blue with Circular Suva Grey Bevel</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Sliders</b>	<b>MediaButton - Blue with Squared White Bezel</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	
<b>Text</b>	<b>MediaButton - Blue with Squared White Bezel</b> <small>A MediaButton widget created on Wed Jun 09 2021</small>	

Select the template design from the list.

**SELECT WIDGET TEMPLATE**
**BACK**

<b>Buttons</b>	<b>LedSpectrum - Light Brown</b> <small>A LedSpectrum widget created on Wed Jun 09 2021</small>	  <div style="border: 2px solid #333; padding: 5px; display: inline-block; background-color: #333; color: white; font-weight: bold; margin-top: 20px;">CONFIRM</div>
<b>Digits</b>	<b>LedSpectrum - Olivine</b> <small>A LedSpectrum widget created on Wed Jun 09 2021</small>	
<b>Gauges</b>	<b>LedSpectrum - Red to Green</b> <small>A LedSpectrum widget created on Wed Jun 09 2021</small>	
<b>Graphs</b>	<b>LedSpectrum - Red</b> <small>A LedSpectrum widget created on Wed Jun 09 2021</small>	
<b>Knobs</b>	<b>LedSpectrum - Watercourse</b> <small>A LedSpectrum widget created on Wed Jun 09 2021</small>	
<b>Led</b>	<b>MediaSpectrum - Red and Cavern Pink</b> <small>A MediaSpectrum widget created on Wed Jun 09 2021</small>	
<b>Media</b>	<b>MediaSpectrum - Red to Green</b> <small>A MediaSpectrum widget created on Wed Jun 09 2021</small>	
<b>Sliders</b>	<b>Scope - Green</b> <small>A Scope widget created on Wed Jun 09 2021</small>	
<b>Text</b>	<b>Scope - Green</b> <small>A Scope widget created on Wed Jun 09 2021</small>	

Click **CONFIRM** to proceed.

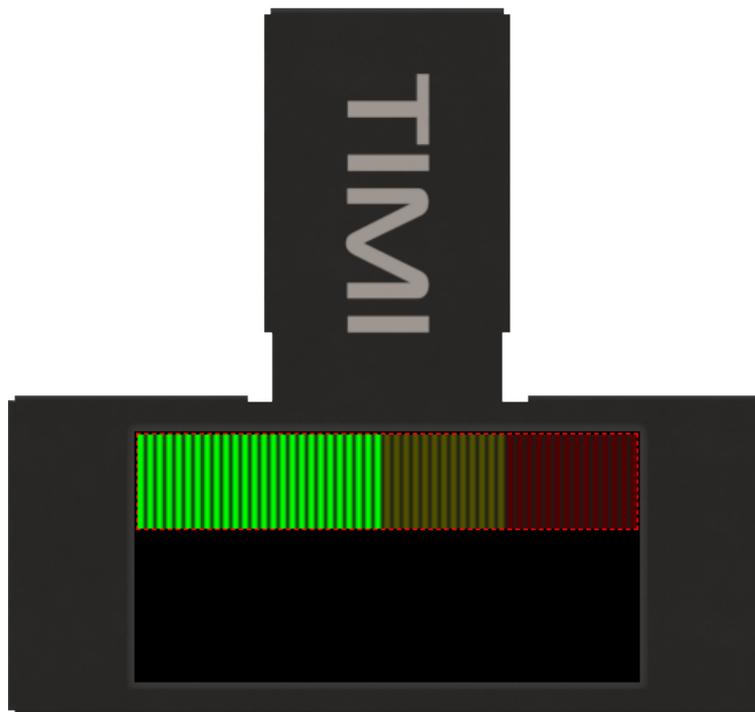
## Styling Widgets

Widget properties, including color, part count, size, minimum and maximum value, can be modified from the property editor.

GaugeA0	
Property	Value
Name	GaugeA0
Left	0
Top	0
Width	158
Height	30
Minimum Value	0
Maximum Value	100
Bar Spacing	1
Bar Thickness	2
Base Color	 #181C18 [0x18E3]
Partition 1 Percentage	50
Partition 1 Inactive Color	 #005000 [0x0280]
Partition 1 Active Color	 #00FC00 [0x07E0]
Partition 2 Percentage	75
Partition 2 Inactive Color	 #505000 [0x5280]
Partition 2 Active Color	 #F8FC00 [0xFFE0]
Partition 3 Inactive Color	 #500000 [0x5000]

## Copy Widgets

Select the target widget



While the target widget is selected, press the **Copy Widget** button as shown. This operation can also be done using the shortcut keys **Alt+C**.



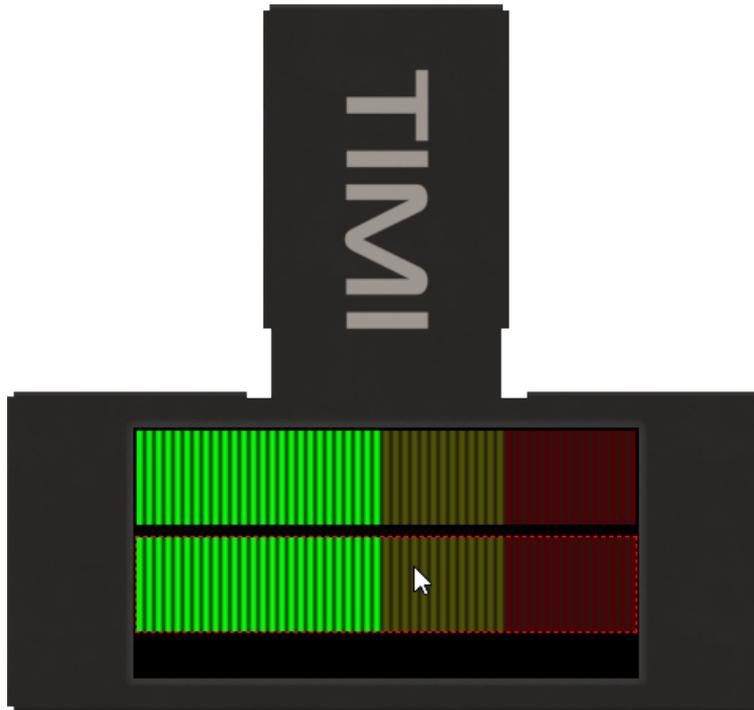
If the widget is to be copied to another page, navigate to the target page.



After copying a widget, press the **Paste Widget** button as shown. This operation can also be done using the shortcut keys **Alt+V**.



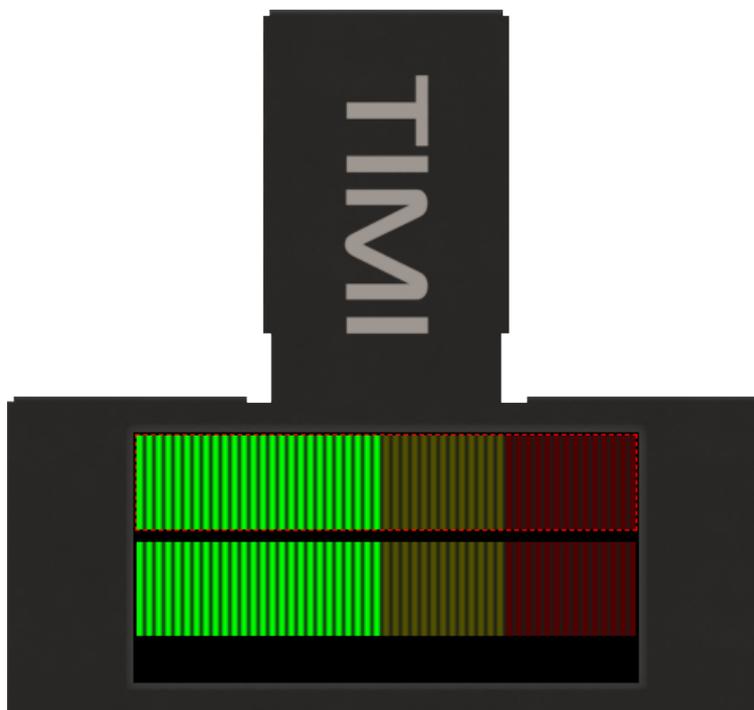
The widget will be copied at the same position and will be automatically selected. Drag the widget to your desired position.



## Move Widgets Across Pages

Besides Copy, a Cut option is also provided which allows widgets to be moved to a different page.

Select the target widget



While the target widget is selected, press the **Cut Widget** button as shown. This operation can also be done using the shortcut keys **Alt+X**.



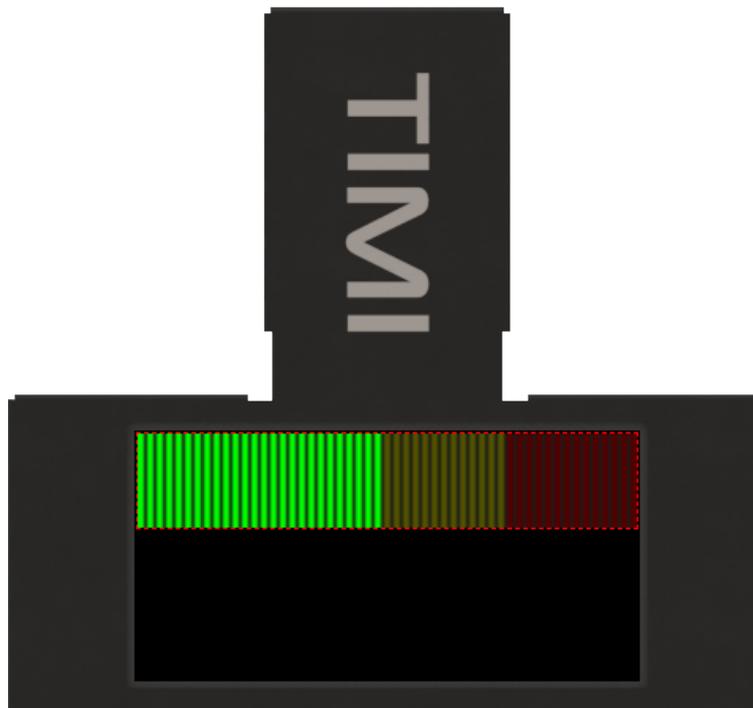
Navigate to the target page.



After performing a cut operation, press the **Paste Widget** button as shown. This operation can also be done using the shortcut keys **Alt+V**.



The widget will be moved to the target page at the same position and will be automatically selected. Drag the widget to your desired position.



 **Note**

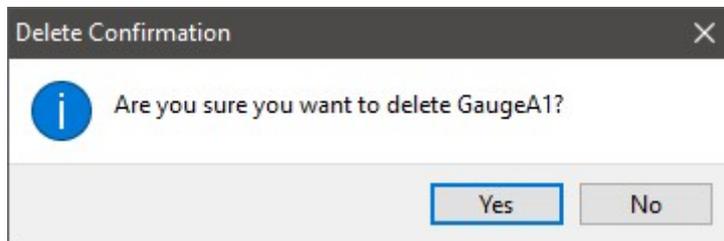
Moving a widget performs an automatic widget renumbering. Therefore, it is best to complete the user interface design before developing code.

## Delete Widgets

Widgets can be deleted by clicking the *Delete Widget* button while the target widget is selected.



A confirmation window will open. Simply click **Yes** to proceed or **No** to cancel.



### Note

Deleting a widget performs an automatic widget renumbering. Therefore, it is best to complete the user interface design before developing code.

# Configurations Files

Pages and widgets can be saved as configuration files (*matesWidget* and *matesPage*) for future use. This allows users to reuse their designs or share it with other users or the community.

## Save Configuration

Select the target widget or the current page



While the target item is selected, press the Save Configuration button as shown.



Provide a short description for the widget or page.

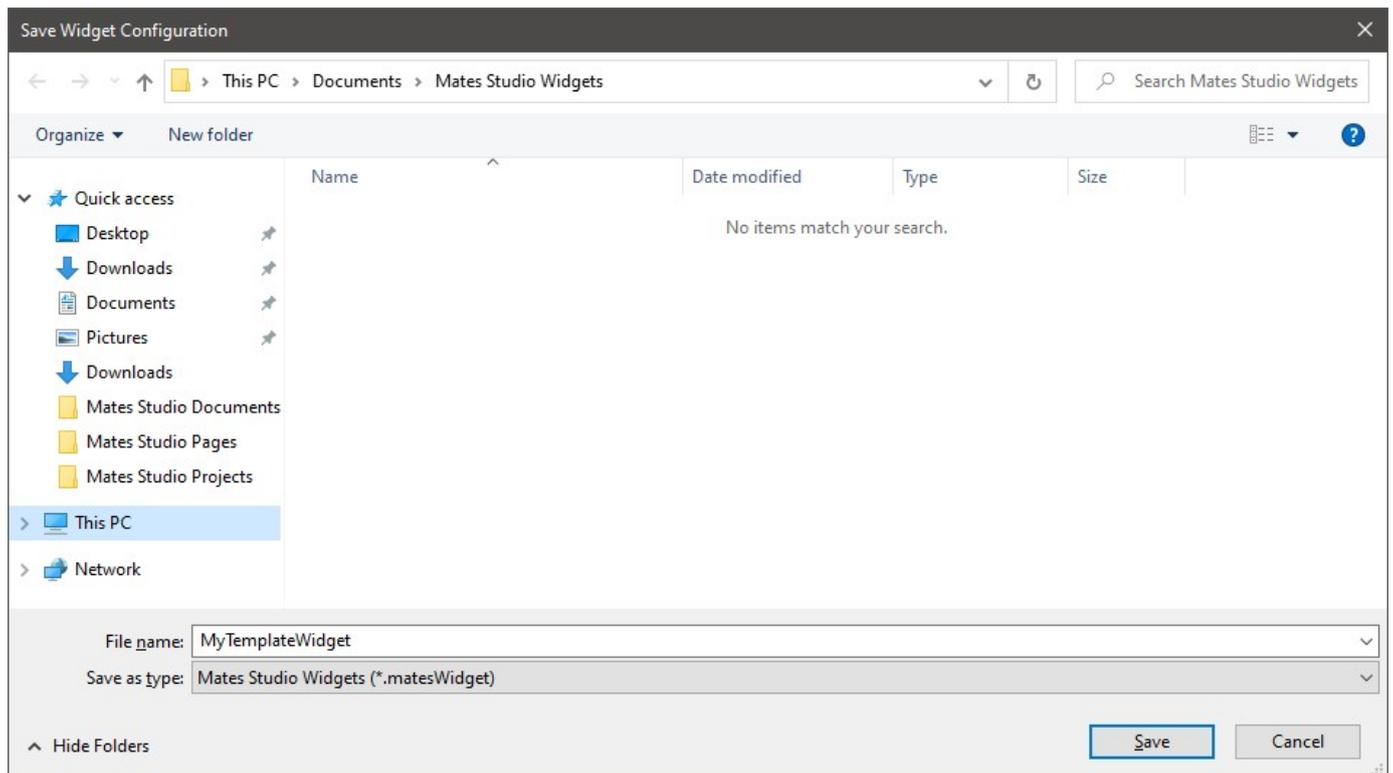
### Set Description

A GaugeA widget created on Mon Aug 03 2021

**Cancel** **Confirm**

Click the **Confirm** button to confirm.

This will open the *Save Configuration* window.



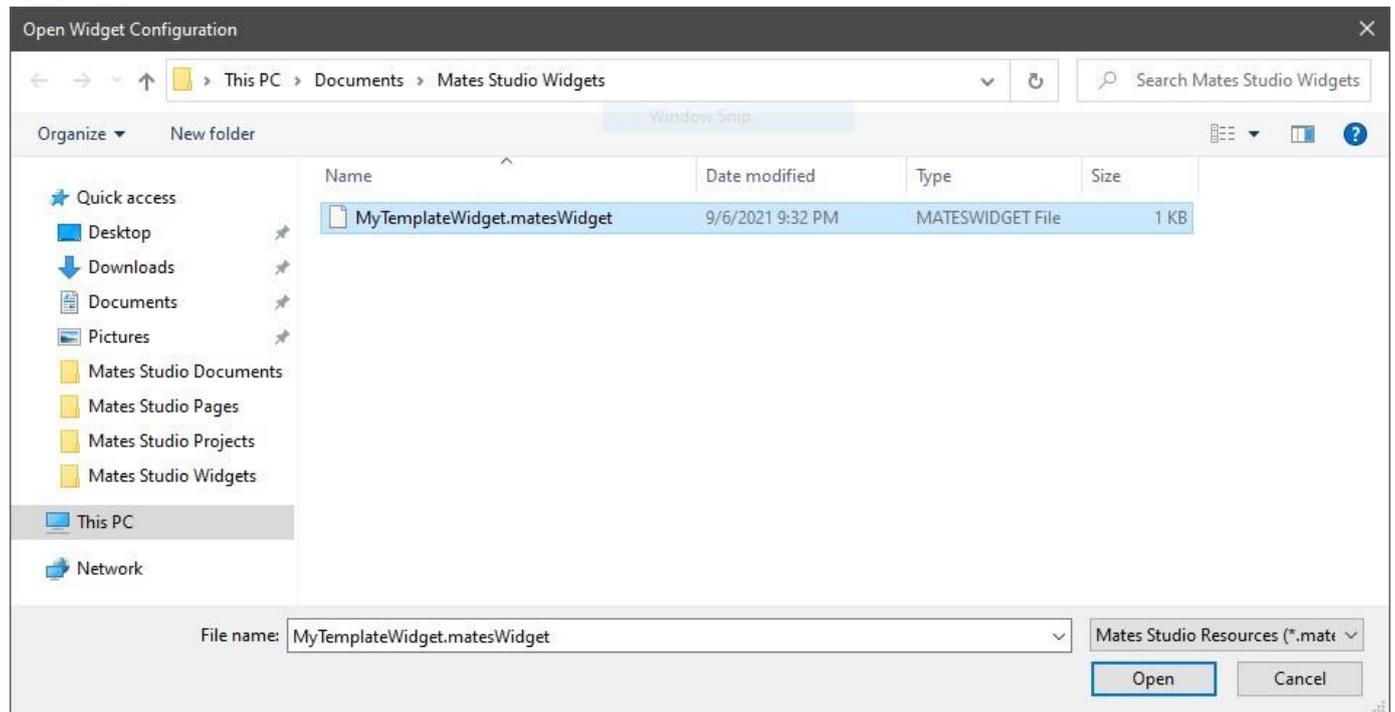
Input an appropriate filename for the configuration and click on **Save** button.

## Load Configuration

A previously saved widget or page configuration can be loaded and added to the current project. To start simply press the **Load Configuration** button as shown.

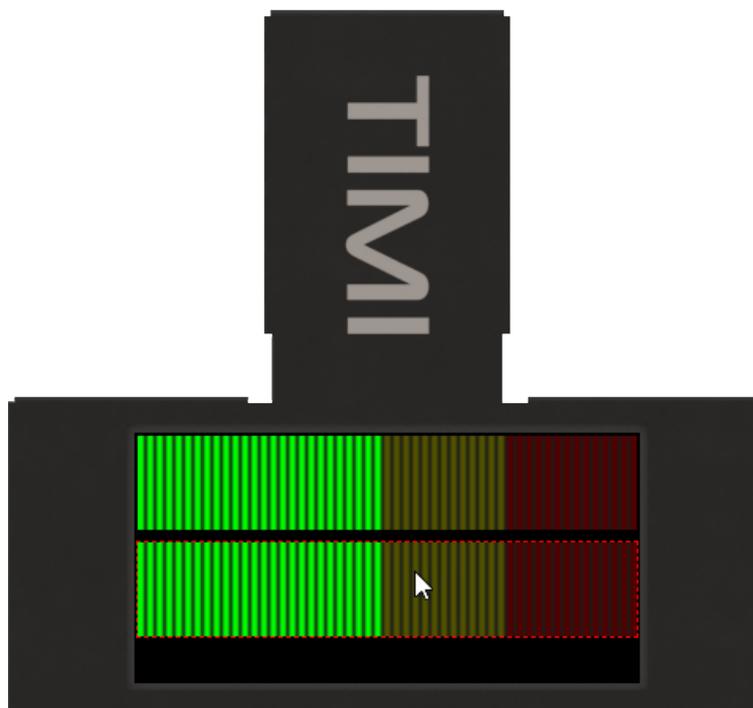


This will open a **Open Configuration** window.



Navigate to the configuration file and click **Open** to continue.

The widget will be added and will be automatically selected. Drag the widget to your desired position.



# Mates Widgets Compatibility

The table below lists the available widgets that applies to setWidgetValue, getWidgetValue, setWidgetParam and getWidgetParam functions.

Widget	Value
MATES_LED	0
MATES_RULER_GAUGE	1
MATES_ANGULAR_METER	2
MATES_GAUGE_A	3
MATES_GAUGE_B	4
MATES_LED_DIGITS	5
MATES_LABELS	6
MATES_BUTTON_A	32
MATES_SWITCH_A	33
MATES_SLIDER_B	34
MATES_KNOB	35
MATES_MEDIA_LED	64
MATES_MEDIA_COLOR_LED	65
MATES_GAUGE_C	66
MATES_GAUGE_D	67
MATES_GAUGE_E	68
MATES_GAUGE_F	69
MATES_MEDIA_GAUGE_A	70
MATES_MEDIA_GAUGE_B	71
MATES_MEDIA_GAUGE_C	72
MATES_MEDIA_GAUGE_D	73
MATES_MEDIA_THERMOMETER	74

Widget	Value
MATES_LED_SPECTRUM	75
MATES_MEDIA_SPECTRUM	76
MATES_SCOPE	77
MATES_SYMBOLS	78
MATES_ROTARY_GAUGE	79
MATES_BUTTON_B	96
MATES_SWITCH_B	97
MATES_MEDIA_BUTTON	98
MATES_SLIDER_A	99
MATES_SLIDER_C	100
MATES_SLIDER_D	101
MATES_SLIDER_E	102
MATES_SLIDER_F	103
MATES_MEDIA_SLIDER	104
MATES_MEDIA_ROTARY	105
MATES_SLIDE_SHOW	128
MATES_ANIMATION	129
MATES_FANCY_LED_A	130
MATES_FANCY_LED_B	131
MATES_FANCY_BUTTON_A	160
MATES_FANCY_BUTTON_B	161

## Note

Some widgets available in Mates Studio behaves differently than majority of the widgets. Such widgets doesn't apply for the common set and get widget value and parameter functions.